

CLAIMS

1 . A rotary disc pump for pumping fluid materials, comprising:

2 a housing having a front and a back wall forming a chamber with a generally coaxial inlet in
said front wall and a generally tangential outlet;

4 an impeller mounted co-axially within said chamber and comprising a shaft mounted in said
back wall of said housing and having an outer end extending from said housing and an inner end
6 within said chamber, at least a first circular disc mounted on the inner end of said shaft, and at least
a second disc mounted in axially spaced relation to said first disc and having an opening in the
8 center thereof; and

a converging member extending co-axially of said shaft from said first disc converging
10 toward a point at least one half the distance to said second disc.

2. A rotary disc fluid pump according to claim 1, wherein said converging member has

2 a conical surface and extends at least to an inner surface of said second disc.

3. A rotary disc fluid pump according to claim 1, wherein said conical member extends

2 beyond said second disc.

4. A rotary disc fluid pump according to claim 3, wherein said conical member extends

2 beyond said second disc to at least a third disc.

5. A rotary disc fluid pump according to claim 3, wherein said conical member is a
2 frustum of a cone.

6. A rotary disc fluid pump according to claim 3, wherein said conical member is
2 formed with a helical fin on an outer surface thereof.

7. A rotary disc fluid pump according to claim 1 wherein said conical member is a
2 frustum of a cone.

8. A rotary disc fluid pump according to claim 7 wherein said conical member is
2 formed with a helical fin on an outer surface thereof.

9. A rotary disc fluid pump according to claim 1, wherein said conical member is
2 formed with a helical fin on an outer surface thereof.

10. A rotary disc fluid pump according to claim 1, wherein said converging member has
2 a generally concave surface and extends at least to an inner surface of said second disc.

11. A rotary disc fluid pump according to claim 1, wherein said converging member has
2 a generally convex surface and extends at least to an inner surface of said second disc.

12. A rotary disc pump for pumping fluid materials, comprising:

a housing having a chamber defined by an inner and an outer side wall joined by a generally circular peripheral wall with a generally coaxial inlet in said outer wall and a generally tangential outlet circular peripheral wall:

an impeller mounted co-axially within said chamber and comprising a shaft mounted in said inner wall of said housing and having an outer end extending from said housing and an inner end within said chamber, at least a first circular disc mounted on the inner end of said shaft, and at least a second disc mounted to said first disc in axially spaced relation to said first disc and having a circular opening in the center thereof; and

a conical member having a base at said first disc and extending co-axially of said shaft from said first disc at least half the distance to said second disc.

13. A rotary disc fluid pump according to claim 12, wherein said conical member extends at least to an inner surface of said second disc.

14. A rotary disc fluid pump according to claim 12, wherein said conical member extends at least to an outer surface of said second disc.

15. An rotary disc fluid pump according to claim 12 wherein said rotor has an outer disc and said conical member extends at least to an inner surface of said outer disc.

2 16. An apparatus according to claim 15 wherein said conical member extends at least to
an outer surface of said outer disc.

2 17. An apparatus according to claim 16 wherein said conical member extends beyond an
outer surface of said outer disc.

2 18. A rotary disc fluid pump according to claim 16, wherein said conical member is
formed with a helical fin on an outer surface thereof.

2 19. A rotary disc fluid pump according to claim 12, wherein said conical member is
formed with a helical fin on an outer surface thereof.

20. An apparatus according to claim 19 wherein said conical member is a frustum of a
cone.

21. An apparatus according to claim 12 wherein said conical member is a frustum of a
cone.

2 22. A rotary disc fluid pump according to claim 12, wherein said conical member is
formed with a plurality of radial blades on an outer surface thereof.